surface material and exposed larger aggregates which increased macro-texture depth and improved friction, but generated more low frequency noise. Frequencies from 1600 to 5000 Hz decreased after shot peening. The increase in low frequency noise was counter balanced by a reduction in high frequency noise. Overall OBSI A-weighted noise levels (re SRTT at 60 mph) of the flexible and rigid pavements were not significantly changed by the shot peening (Skidabrader®) process. Rigid pavement became slightly quieter and flexible pavement did not change or became slightly louder.

Rymer, B. and Donavan, P. (2010): "Determining the End Limits of Quieter Pavement Projects"

Ongoing work in the area of tire pavement acoustics has definitively determined that there can be a significant variation of noise levels between the loudest and quietest pavements. Using the On-Board-Sound-Intensity (OBSI) measurement procedure, it has also been determined that tire-pavement noise is highly correlated to the overall traffic noise levels especially when traffic is flowing at freeway speeds. This presents road agencies with a potential new tool for lowering traffic noise levels by using quieter pavements. Changing from a 'loud', or old and raveled pavement to a newer, smoother, lower noise pavement can yield acoustic benefits to roadside communities or 'receivers'. The decrease in noise level depends on the difference between OBSI levels of the existing pavement and the selected quieter pavement and the magnitude of this decrease may also be influenced by vehicle mix. After the decision to use a quieter pavement has been made, the end limits for the pavement must be determined. The problem is somewhat similar to deciding where to terminate a sound wall relative to the location of the roadside receivers. This analysis determined that the quiet pavement end limits are less sensitive to variation in typical roadway cross sections, somewhat sensitive to the distance between the receiver and the roadway and where the quiet pavement terminates, and very sensitive to the absolute differences between the noisier and quieter pavements.

Sachakamol, P. and Dai, L. (2007): "Road and Tire Noise Emission Assessment with Closed Proximity Method on an Asphalt Rubber Concrete Pavement", in Proceedings of the Cost-Effective Assessment/Rehabilitation of the Condition of Materials for the Transportation Association of Canada Fall 2007 meeting, Saskatoon, Saskatchewan

A road/tire noise emission assessment has been performed in Saskatchewan with the Close Proximity Method (CPX), a method based on test tire rolling on a road with microphones located close to the tire surface. In CPX road tests, the average A-weighted sound pressure levels emitted by one specified reference tire are measured with the vehicle speed over a specified road distance. The data are collected by microphones located close to the tires. In order to understand the acoustic characteristics of the newly paved Asphalt Rubber Concrete (ARC) pavement, a special test vehicle was built. Two uniquely different reference tires